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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/822,825	04/02/2001	Benoit Barriere	ATOCM-207	8093

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EXAMINER

CREPEAU, JONATHAN

ART UNIT PAPER NUMBER

1746

DATE MAILED: 11/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/822,825

Applicant(s)

BARRIERE ET AL.

Examiner

Jonathan S. Crepeau

Art Unit

1746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 September 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1, 6-12, 16 and 17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16 and 17 is/are allowed.
- 6) ☒ Claim(s) 1 and 6-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

1. This Office action addresses claims 1, 6-12 and newly added claims 16 and 17. Claims 16 and 17 are allowed. However, claims 1 and 6-12 remain rejected for the reasons of record. Accordingly, this action is made final.

### ***Claim Rejections - 35 USC § 103***

2. Claims 1 and 6-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 97/27260 in view of Mizuide et al (U.S. Patent 6,329,471).

Regarding claims 11 and 12, WO '260 discloses a lithium battery comprising a positive electrode and negative electrode (see page 6, lines 1-5). Regarding claims 6 and 7, the positive electrode comprises mixed oxide particles (see page 6, line 32). Regarding claims 6 and 9, the negative electrode comprises carbon particles (see page 6, line 9). Regarding claim 8, the current collector of the positive electrode is aluminum (see page 10, line 34). Regarding claim 10, the current collector of the negative electrode is copper (see page 10, line 26). Regarding claims 6 and 13, each electrode comprises a structure having a collector (L1) and a fluorinated adhesive composition (L2) comprising the active material (see page 7, lines 6-27). However, regarding claims 1 and 6, the invention of WO '260 is more broadly directed to structures comprising a metal (L1), a fluorinated adhesive composition (L2), and a fluorinated resin (L3), in that order (see page 4, lines 18-20). The adhesive resin composition comprises a PVDF resin, a

functionally-modified acrylic or methacrylic polymer, and a vinylidene fluoride copolymer resin (see page 2, lines 4-7).

WO '260 does not expressly teach that the layer L2 comprises a fluoro primer which is derived from a fluoropolymer (e.g., VDF-HFP) chemically modified by a partial dehydrofluorination followed by oxidation, as recited in claim 1.

Mizuide et al. is directed to carboxyl group-containing vinylidene fluoride copolymer (see abstract). The copolymer may contain hexafluoropropylene and is made by a dehydrofluorination/oxidation process (see col. 2, line 27 et seq.).

Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the artisan would be motivated to use the carboxyl group-containing vinylidene fluoride copolymer of Mizuide et al. in the layer L2 of WO '260. In column 1, line 17, Mizuide et al. teach that functional oligomers having a carboxyl group at both terminals are useful as raw materials in adhesives. Furthermore, WO '260 teaches that, with regard to the modified acrylic component in the layer L2, "as examples of functional groups which exhibit bonding properties or affinity in respect of metal, there can be cited carboxylic acid groups or carboxylic acid anhydride groups [...] and the like." (page 2, line 36). Although this teaching is primarily directed to the acrylic component of the layer L2, this teaching would also motivate the artisan to incorporate carboxyl groups into the other components of the layer L2 in hopes of increasing the adhesive strength of those components. As such, it would be obvious to use the carboxyl-group containing PVDF-HFP copolymer of Mizuide et al. as the PVDF copolymer component of the layer L2 of WO '260. The hexafluoropropylene monomer comprises a perfluoroalkyl (CF<sub>3</sub>) group, as recited in claim 4.

Further, although WO '260 does not expressly teach the feature in claim 6 that the layer L3 of fluoropolymer contains the active material, this feature would be obvious to one of ordinary skill in the art. As noted above, the reference specifically teaches layers L1 and L2 in an electrode (L2 containing the active material), but more broadly teaches a structure comprising layers L1, L2, and L3 (L3 being a conventional fluoropolymer). The artisan would be motivated to use an electrode structure comprising three layers instead of two because the unmodified fluoropolymer in layer L3 is more resistant to chemical attack than the modified polymer (see col. 6, line 14 of WO '260). Accordingly, the WO '260 reference fairly suggests the three-layer electrode structure recited in claim 6.

### ***Double Patenting***

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claim 1 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-23 of U.S. Patent No. 6,773,815. Although the

conflicting claims are not identical, they are not patentably distinct from each other because the claims of the '815 patent anticipate instant claim 1. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993).

### ***Response to Arguments***

5. Applicant's arguments filed September 13, 2004 have been fully considered but they are not persuasive. Applicant's assertion that the Mizuide reference is nonanalogous has been carefully considered but is not persuasive to overcome the outstanding rejection. The Examiner agrees with Applicants in that the Mizuide reference is not within the same field of endeavor as the WO '260 reference (i.e., plastic-to-metal bonding). Citing *In re Clay*, Applicants further state that the second prong of the test requires determining whether the same problem is addressed. The Examiner again acknowledges that the Mizuide reference does not expressly address the problem addressed by WO '260 and Applicants. However, at the top of page 1061, the text of *In re Clay* states that "[a] reference is reasonably pertinent if, even though it may be in a different field from that of the inventor's endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his problem." It is submitted that the Mizuide reference would have commanded itself to the attention of the inventor because of what is disclosed in WO '260. As noted above, WO '260 teaches that, with regard to the modified acrylic component in the layer L2, "as examples of functional groups which exhibit bonding properties or affinity in respect of metal, there can be cited carboxylic acid groups or carboxylic acid anhydride groups [...] and the like." (page 2, line

36). This teaching provides a clear suggestion that polymers modified with carboxylic acid functional groups are useful in adhering plastic to metal. As Mizuide is concerned with carboxylic acid-containing polymers, it is submitted that the reference would have commanded itself to the attention of an artisan having knowledge of the disclosure of WO '260.

Regarding the assertion that the process of Mizuide results in a different product than that presently claimed, this assertion is not persuasive. Applicants state that "for instance, the process of Mizuide leads to more oligomers than polymers, since the examples show a reduction of molecular weight." However, as there are still polymers present, this is believed to be sufficient to meet the claimed limitations. In addition, the final product of the layer L2, as it is recited in a product-by-process format, is also not seen to exclude the presence of oligomers.

Regarding the double patenting rejection (no longer provisional as the '560 application has issued as a patent), Applicants state that it would not be obvious to delete the epoxy primer of the patent claims to arrive at the claimed invention. However, claim 3 of the patent does not require an epoxy primer, and further, instant claim 1 does not exclude such epoxy primer. As such, claim 1 is still anticipated by the patent claims.

#### *Allowable Subject Matter*

6. Claims 16 and 17 are allowed.
7. The following is a statement of reasons for the indication of allowable subject matter:  
Claims 16 and 17 both employ "consisting of" language that is considered to close the layer L2 from containing materials other than the modified PVDF homopolymer or VF<sub>2</sub>/HFP

copolymer. WO '260, the closest prior art, discloses additional components in the adhesive layer (L2), and as such, does not anticipate or render obvious claims 16 and 17.

### *Conclusion*

8. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

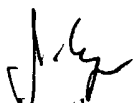
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Crepeau whose telephone number is (571) 272-1299. The examiner can normally be reached Monday-Friday from 9:30 AM - 6:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr, can be reached at (571) 272-1414. The phone number for the organization where this application or proceeding is assigned is (571) 272-1700. Documents may be faxed to the central fax server at (703) 872-9306.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jonathan Crepeau  
Primary Examiner  
Art Unit 1746  
November 22, 2004